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FIG RUST AND ITS CONTROL

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Rust of figs, a true rust, is caused by the fungus *Physopella fici* (Cast.) Arth. It is more or less common in the United States where figs are grown. In Florida it has been reported from all parts of the State and appears annually, causing varying amounts of damage from season to season, depending somewhat on climatic conditions. The disease, which attacks only the leaves of the fig tree, usually appears about the time the fruits are fully grown and begin to ripen. This may vary several weeks, however, but the disease very seldom has been observed while the fruits are still immature. The disease appears first in different places on the foliage and may spread rapidly and infect 100 percent of the leaves in the course of 20 or 30 days. As the disease becomes more severe, the leaves turn yellow and are shed prematurely. When shedding takes place early, a new crop of leaves usually develops and they in turn become infected and drop off. In certain instances a third crop of leaves has been known to develop but they are usually few in number and considerably under size.

Since the disease is found on the leaves and does not actually attack the fruit, the damage resulting from it may not seem severe. As a matter of fact, the production of fruit is directly dependent on the foliage and if the foliage is kept free from the disease a larger crop of fruit of better quality usually will be produced. On the other hand, if it is necessary for the tree to produce and develop two or three crops of leaves annually in order to grow, it is very evident that considerable energy and reserve food material will be expended in the process which otherwise would be used in producing growth and fruit the following season. The continued loss of foliage thus reduces growth, quantity and quality of fruit and, if the disease continues to be severe, it may be the most important contributing factor in the gradual failure and death of the tree when environmental conditions are not favorable for its growth.

DESCRIPTION OF THE DISEASE

The disease is first evident by the appearance of small, more or less angular, yellowish-green specks in the blade of the leaf. These specks do not enlarge rapidly, but do become decidedly

yellow or yellowish-brown, often with a slightly reddish margin. Close examination shows that the upper surfaces of these spots are smooth and the tissue appears to be unaffected, except for color. On the lower surface, however, there appear to be small blisters, one to a spot. These blisters or pustules eventually break open through irregular cracks and the mature spores of the fungus escape in the form of a fine brown powder which is easily detected on one's finger after it is brushed lightly over the pustules. With continued infection these specks containing the pustules become very numerous and the leaf blade begins to show more yellow than green color. When this stage is reached the leaf fails rapidly, soon becomes entirely yellow and often brown and dead around the edges. It begins to curl inward from the edges and soon falls from the tree. When the infection is severe and the seasonal conditions are favorable for the development of the disease, a tree may become entirely destitute of leaves in three or four weeks. On the other hand if contributing factors are unfavorable for the development of the disease and the infection is not severe a tree may be only partially defoliated and the disease may pass through the season unnoticed.

CONTROL

The complete life history of the fungus has not been thoroughly worked out, up to the present time. However, certain recommendations have been put into practice and have given a very satisfactory control of the disease.

Sanitation should be practiced, but with precaution. The trees should be well mulched to insure healthy growth, but this mulch should not include the fig leaves which have been shed because of this disease. All diseased leaves should be raked away from the tree and either burned or buried several inches deep. If they are left where they fall there is danger of the fungus surviving in them and thus acting as the source of infection for the next crop of leaves, whether produced during the current season or during the following spring.

In addition to these sanitary measures the trees should be sprayed very carefully and thoroughly. A satisfactory fungicide is 4-4-50 bordeaux mixture. This spray should be made according to directions to insure efficiency and eliminate the possibility of injury to the tree. The first application of bordeaux should be made in spring when the earliest bud leaves are fully expanded, and other applications should follow often enough to keep all new growth covered. Thus, these applications will be made at various intervals depending on the rapidity and periods of growth. Spraying should be discontinued when the young developing fruits are one-fourth inch in diameter, because the spray sticks to and discolors them. One or two additional applications of spray should be made after the crop of fruit has been harvested to prevent infection and premature shedding of the leaves.

The largest quantity and best quality of fruit can be expected only from healthy and vigorous trees.